

REMARKS

Claims 24-33, 35, 38-44, and 46 are pending and rejected in this application. Claim 40 is canceled and claim 39 is amended hereby.

Responsive to the rejection of claim 40 under 35 USC § 112, second paragraph, Applicants have canceled claim 40.

Responsive to the rejection of claims 24-33, 38-44, and 46 under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 4,230,743 (Nakamura et al.) in view of US Patent No. 5,206,057 (Finnicum et al.), and in further view of US Patent No. 5,908,668 (Bülow et al.), and Japanese Patent No. 06-262129 (JP 129), Applicants respectfully traverse the rejection of these claims and submit that claims 24-33, 38, 39, 41-44, and 46 are in condition for allowance.

Nakamura et al. disclose a process for producing pressure sensitive copying paper (Figs. 3 and 4) using a coating solution 1 containing microcapsules as a main component. A wind shielding plate 11 is placed upstream of the contact area so that the free fall of the material reaches web 9 without being disturbed (column 4, lines 8-55). The coating apparatus shown in Fig. 4 has a first coating apparatus and a second coating apparatus positioned subsequent to the first coating apparatus in the direction of flow of web 9. Web 9 goes through a first curtain and a second curtain flow as it proceeds in the direction of the arrow shown on web 9 of Fig. 4. The second coating layer is formed on the first coating layer while the first coating layer is in an undried state (column 7, lines 1-50).

Finnicum et al. show a device for applying a curtain coating for photographic film in which a multi-layer material passes through slots 14 and is dropped onto a web by gravity. The curtain 17 is bounded by sidewalls 19, 20 and a lateral wall 21. A valve mechanism permits a fluid to pressurize the space between the curtain 17 and the perimeter walls via a conduit 22 and

valve 23 in order to control where on the arc of the web the curtain 17 impinges. There is a space between the web and the walls (column 3, lines 20-52).

Bülöw et al. disclose a curtain coating apparatus having a planer deflector surface (Figs. 1 and 2) including a reservoir 10. Below pouring head 1 there is a planar deflector surface 20 that is a portion of a baffle plate 2. Solder resist flows out of reservoir 10 of pouring head 1 through slot 11 and descends in the form of a curtain firstly onto deflector surface 20 of baffle plate 2 and runs downward along deflector surface 20 until it reaches a cutoff edge 21 at the lower end of deflector surface 20. From there, the solder resist descends in the form of a pouring curtain LV. In the region between pouring blades 3, pouring curtain LV falls onto board 4, for example a printed circuit board, essentially along the line of impact, whereas the solder resist of pouring curtain LV outside of that region passes into diversion troughs 30 where it is caught and fed to a collection trough, not shown (column 3, line 45 - column 4, line 4).

JP 129 illustrates in Fig. 1 a coating 8 that falls onto a blade 18 with the coating then flowing along blade 18 until it contacts a surface of material 1 that is to be coated (English abstract and Figs. 1 and 2).

In contrast, claim 24 as previously amended, recites in part:

enclosing said space partially bounded by said first curtain and said second curtain using said first curtain applicator unit, said second curtain applicator unit, the application medium curtains coming from said first curtain applicator unit and said second curtain applicator unit, the paper web and a suction/blower box;

positioning a first guideblade immediately adjacent to said first discharge nozzle;

positioning a second guideblade immediately adjacent to said second discharge nozzle;

setting a doctor element against a surface of the paper web, said doctor element intercepting said first curtain, said doctor element leading said first curtain to the paper web; and

enhancing the wetting of said curtain medium from said second curtain to said medium from said first curtain on the web by providing a negative pressure in said space.

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed, nor suggested by Nakamura et al., Finnicum et al., Bülow et al., JP' 129 or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Nakamura et al., disclose a process for producing pressure sensitive copying paper including a coating solution that contains microcapsules as a main component. Finnicum et al. discloses a device for applying a curtain coating for photographic film in which a multilayer material passes through slots and is dropped onto a web by gravity. Bülow et al. disclose a curtain coating apparatus having a planer deflector surface including a reservoir that holds solder resist. JP 129 illustrates a coating that falls onto a blade with the coating then flowing along the blade until it contacts the surface of the material that is to be coated. None of the references teach the enclosing of a space, which is bounded by elements described in the independent claim, since Nakamura et al. is obviously open, and Finnicum et al. discloses the existence of a space between the web and the walls. Further, none of the references teach the enhancement of wetting of the curtain mediums by providing a negative pressure in the space that is bounded by the curtains, as recited in claim 24. Applicants' invention is taught away from by the Finnicum et al. reference in that the wall precludes the enhancement step brought about by the interaction of the space and the two application mediums. Further, none of the references teach the combination of a doctor element intercepting a curtain that has flowed over a guideblade as is claimed in Applicants' independent claim. Therefore, Nakamura et al., Finnicum et al., Bülow et al., JP 129, and any of the other cited references, alone or in combination, fail to disclose, teach, or

suggest the steps of enclosing the space partially bounded by the first curtain and the second curtain using the first curtain applicator and the second curtain applicator unit, the application medium curtains coming from the first curtain applicator unit and the second curtain applicator unit, the paper web, and a suction/blower box, the positioning of a first guideblade immediately adjacent to the first discharge nozzle, the positioning of a second guideblade immediately adjacent to the second discharge nozzle, setting a doctor element against the surface of the paper web, the doctor element intercepting the first curtain, the doctor element leading the first curtain to the paper web, and enhancing the wetting of the curtain medium from the second curtain to the medium from the first curtain on the web by providing a negative pressure in the space, as recited by claim 24.

Applicants' invention has distinct advantages in that the combination of the elements of enclosing the space so that the pressure therein is utilized to affect the coating characteristics and, more particularly, the application of a negative or positive pressure in the space to enhance the wetting or stabilize the curtain falling from a guideblade positively influenced. For all of the foregoing reasons, Applicants submit that claim 24, and claims 25-33, 38, and 41-44 depending therefrom, are in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 46 as previously amended, recites in part:

enclosing said space partially bounded by said first curtain and said second curtain using said first curtain applicator unit, said second curtain applicator unit, the application medium curtains coming from said first curtain applicator unit and said second curtain applicator unit, the paper web and a suction/blower box;

positioning a first guideblade immediately adjacent to said first discharge nozzle;

positioning a second guideblade immediately adjacent to said second discharge nozzle;

setting a doctor element against a surface of the paper web, said doctor element intercepting said first curtain, said doctor element leading said first curtain to the paper web; and

stabilizing said first curtain and said second curtain by applying a positive pressure in said space.

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed, nor suggested by Nakamura et al., Finnicum et al., Bülow et al., JP' 129 or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Nakamura et al., disclose a process for producing pressure sensitive copying paper including a coating solution that contains microcapsules as a main component. Finnicum et al. discloses a device for applying a curtain coating for photographic film in which a multilayer material passes through slots and is dropped onto a web by gravity. Bülow et al. disclose a curtain coating apparatus having a planer deflector surface including a reservoir that holds solder resist. JP 129 illustrates a coating that falls onto a blade with the coating then flowing along the blade until it contacts the surface of the material that is to be coated. None of the references teach the enclosing of a space, which is bounded by elements described in the independent claim, since Nakamura et al. is obviously open, and Finnicum et al. discloses the existence of a space between the web and the walls. Further, none of the references teach the stabilizing of the curtains by applying a positive pressure as recited in claim 46. Applicants' invention is taught away from by the Finnicum et al. reference in that the wall precludes the enhancement step brought about by the interaction of the space and the two application mediums. Further, none of the references teach the combination of a doctor element intercepting a curtain that has flowed over a guideblade as is claimed in Applicants' independent claim. Therefore, Nakamura et al., Finnicum et al., Bülow et al., JP 129, and any of the other cited references, alone or in

combination, fail to disclose, teach, or suggest the steps of enclosing the space partially bounded by the first curtain and the second curtain using the first curtain applicator and the second curtain applicator unit, the application medium curtains coming from the first curtain applicator unit and the second curtain applicator unit, the paper web, and a suction/blower box, the positioning of a first guideblade immediately adjacent to the first discharge nozzle, the positioning of a second guideblade immediately adjacent to the second discharge nozzle, setting a doctor element against the surface of the paper web, the doctor element intercepting the first curtain, the doctor element leading the first curtain to the paper web, and stabilizing the first curtain and the second curtain by applying a positive pressure in the space, as recited in claim 46.

Applicants' invention has distinct advantages in that the combination of the elements of enclosing the space so that the pressure therein is utilized to affect the coating characteristics and, more particularly, the application of a negative or positive pressure in the space to enhance the wetting or stabilize the curtain falling from a guideblade positively influenced. For all of the foregoing reasons, Applicants submit that claim 46 is in condition for allowance, which is hereby respectfully requested.

Claim 39 has been amended incorporating the elements of claim 24. By such an amendment, no new matter has been added, nor has any element been added that would result in the need for another search. Therefore, the amendment should be entered and reviewed or in the alternative, entered as it places the application in better condition for appeal.

In contrast to the cited prior art, claim 39 recites in part:

producing one of a vacuum and a positive pressure with a pressure-differential device, said pressure-differential device being operative positioned between said first curtain applicator unit and said second curtain applicator unit.

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed, nor suggested by Nakamura et al., Finnicum et al., Bülow et al., JP' 129 or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Nakamura et al., disclose a process for producing pressure sensitive copying paper including a coating solution that contains microcapsules as a main component. Finnicum et al. discloses a device for applying a curtain coating for photographic film in which a multilayer material passes through slots and is dropped onto a web by gravity. Bülow et al. disclose a curtain coating apparatus having a planer deflector surface including a reservoir that holds solder resist. JP 129 illustrates a coating that falls onto a blade with the coating then flowing along the blade until it contacts the surface of the material that is to be coated. In contrast, to these references, Applicants have recited that the pressure-differential device is operatively positioned between the first curtain applicator unit and the second curtain applicator unit. As can be seen in the figures of the cited prior art and the text of the associated specifications, none of those references disclose the positioning of a pressure differential device operatively between the first and second curtain applicator units. Therefore, Nakamura et al., Finnicum et al., Bülow et al., JP 129, and any of the other cited references alone or in combination fail to disclose, teach, or suggest the step of producing a vacuum or a positive pressure with a pressure-differential device, the pressure-differential device being operative positioned between the first curtain applicator unit and the second curtain applicator unit, as recited in claim 39.

Claim 35 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Finnicum et al. and in further view of U.S. Patent No. 5,192,592 (Shay). However, claim 35 depends from claim 24 and claim 24 is now in condition for

allowance for the reasons given above. Accordingly, Applicants submit that claim 35 is now in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicants submit that the pending claims are definite and do particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Moreover, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,

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